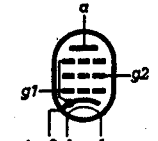
PHILIPS EL 82

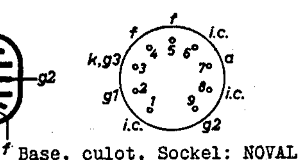
PENTODE for use as frame and sound output tube
PENTHODE pour utilisation comme tube de sortie de déviation verticale et de son
PENTODE zur Verwendung als Endröhre für die vertikale Ablenkung und für die Schallwiedergabe

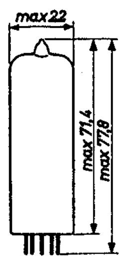
Heating : indirect by A.C. or D.C. parallel supply
Chauffage: indirect par C.A. ou C.C. alimentation parallèle
Heizung : indirekt durch Wechsel- oder Gleichstrom; Parallelspeisung

V_f = 6,3 V
I_f = 800 mA

Dimensions in mm
Dimensions en mm
Abmessungen in mm







Base, culot, Sockel: NOVAL

Capacitances
Capacités
Kapazitäten

C_a	=	5,9 pF
C_{g1}	=	11 pF
C_{ag1}	<	1 pF
C_{g1f}	<	0,15 pF

Optimum peak anode current in frame output application

To allow for tube spread and for deterioration during life in frame output application the circuit should be designed around a peak anode current not exceeding

90 mA at V_a = 50 V, V_{g2} = 170 V
120 mA at V_a = 60 V, V_{g2} = 200 V

Courant anodique de crête optimum en application comme tube de sortie pour la déviation verticale

Pour tenir compte des tolérances du tube et de la dégradation en service, le circuit devra être conçu pour un courant anodique de crête ne dépassant pas une valeur de

90 mA à V_a = 50 V, V_{g2} = 170 V
120 mA à V_a = 60 V, V_{g2} = 200 V

<u>Höchstwert des Anodenspitzenstromes beim Gebrauch als Endröhre für die vertikale Ablenkung</u>
Um den Röhrentoleranzen und der Verschlechterung während der Lebensdauer Rechnung zu tragen, soll die Schaltung entworfen werden für einen Höchstwert des Anodenspitzenstromes von

90 mA bei V_a = 50 V, V_{g2} = 170 V
120 mA bei V_a = 60 V, V_{g2} = 200 V

Operating characteristics as sound output tube, class A
Caractéristiques d'utilisation comme tube de sortie de son, classe A
Betriebsdaten als Endröhre für Schallwiedergabe, Klasse A

$V_a = V_b$	=	170	200	V
V_{g2}	=	170	-	V
R_{g2}	=	-	680	Ω
V_{g1}	=	-10,4	-13,9	V
I_a	=	53	45	mA
I_{g2}	=	10	8,5	mA
S	=	9	7,6	mA/V
R_i	=	20	24	kΩ
μ_{g2g1}	=	10	10	
R_a	=	3	4	kΩ
W_o (d = 10 %)	=	4,0	4,2	W
V_i (d = 10 %)	=	6	7	V_{eff}
V_i (W_o =50 mW)	=	0,5	0,55	V_{eff}

Operating characteristics as sound output tube, class A push-pull (two tubes)
Caractéristiques d'utilisation comme tube de sortie de son, classe A push-pull (deux tubes)
Betriebsdaten als Endröhre für Schallwiedergabe, Klasse A Gegentakt (zwei Röhren)

V_a	=	170		200		V
V_{g2}	=	170		200		V
R_k	=	100		135		Ω
R_{aa}	=	4		4		kΩ
V_i	=	0	2x9,3	0	2x13,5	V_{eff}
I_a	=	2x46	2x50	2x45	2x52	mA
I_{g2}	=	2x8,7	2x17	2x8,5	2x19	mA
W_o	=	0	9	0	12	W
d_{tot}	=	-	5	-	5	%

Limiting values
Caractéristiques limites
Grenzdaten

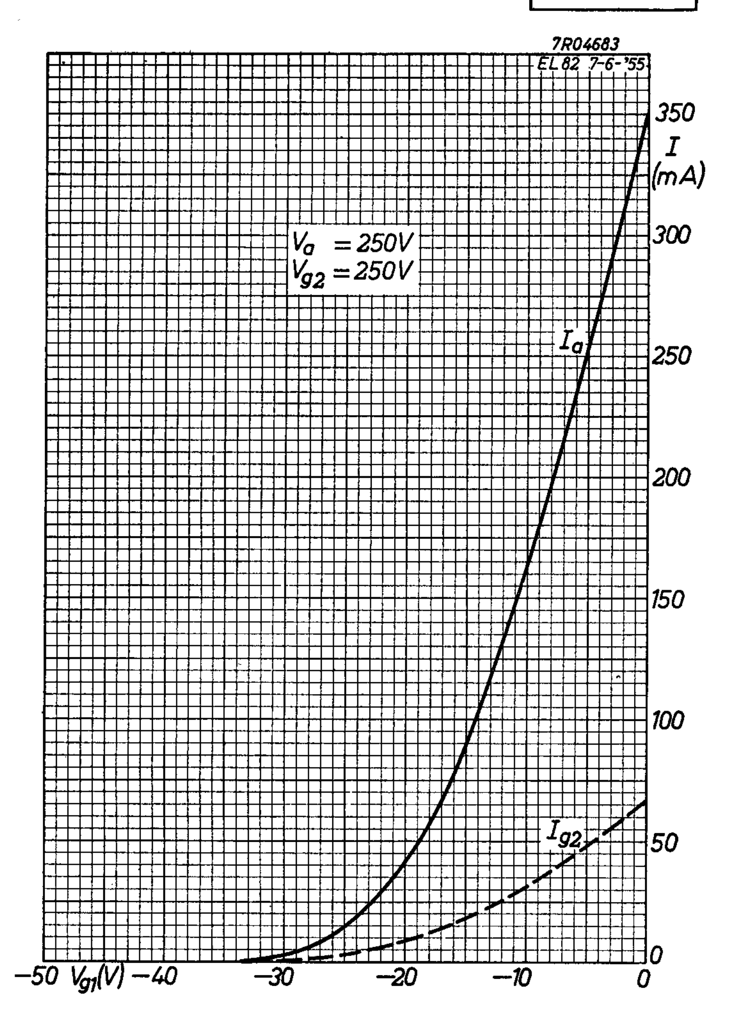
V_{a_o}	= max. 550 V		W_{g2_p}		= max. 4 W
V_{a_p}	= max. 2500 V[1]		I_k		= max. 75 mA
$-V_{a_p}$	= max. 500 V		V_{g1}	(I_{g1} =+0,3μA)	= max. -1,3 V
V_a	= max. 250 V[4]		R_{g1}		= max. 1 MΩ[2]
W_a	= max. 9 W		R_{g1}		= max. 0,4 MΩ[3]
V_{g2_o}	= max. 550 V		R_{kf}		= max. 20 kΩ
V_{g2}	= max. 250 V		V_{kf}		= max. 100 V
W_{g2}	= max. 2,5 W				

[1]) Max. pulse duration 10% of a cycle, with a maximum of 2 msec
Durée de l'impulsion max. 10% d'un cycle, avec un maximum de 2 msec
Impulszeit max. 10% einer Periode, mit einem Maximum von 2 mSek

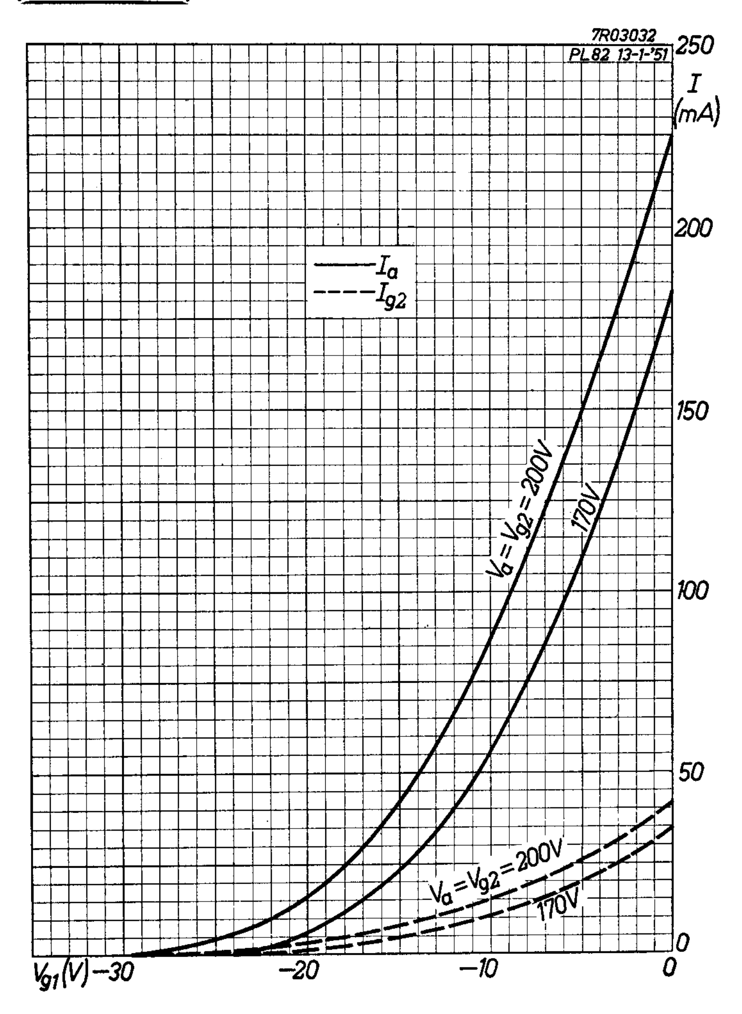
[2]) With automatic grid bias
Avec polarisation négative fixe
Mit automatischer negativer Gittervorspannung

[3]) With fixed grid bias
Avec polarisation négative fixe
Mit fester negativer Gittervorspannung

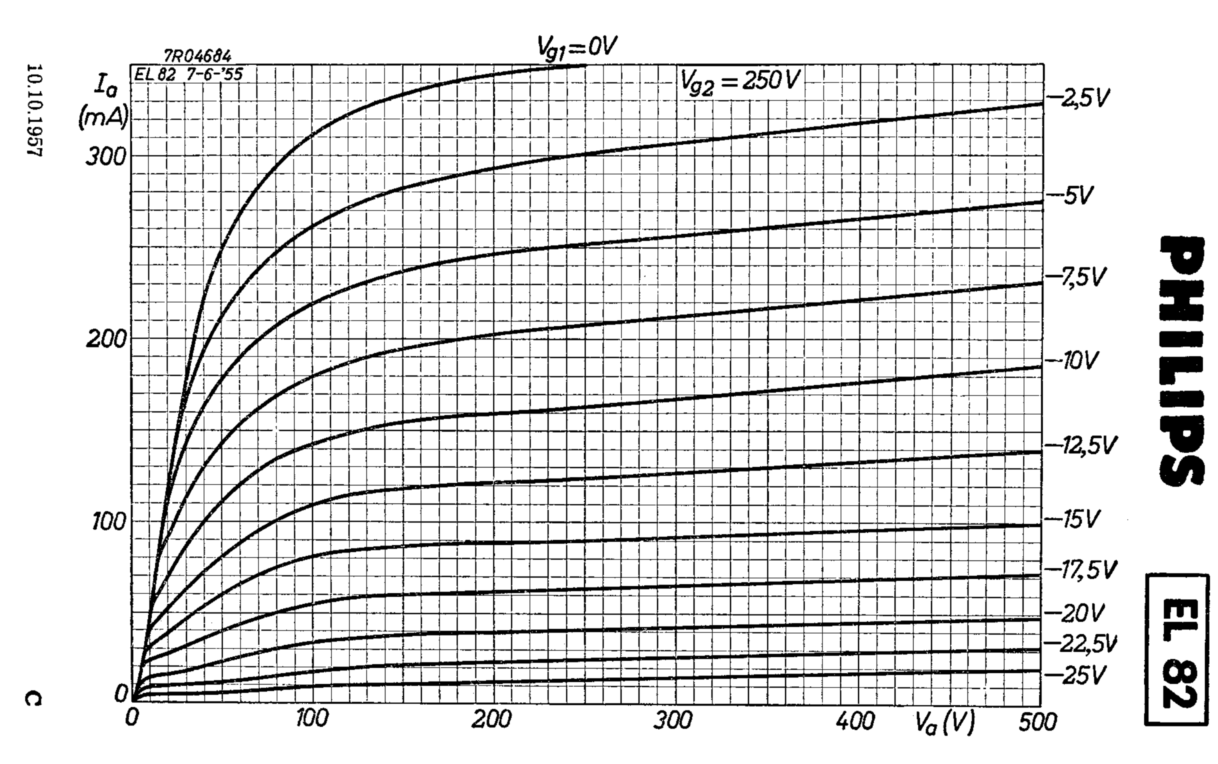
[4]) When used as frame output tube with $W_a \leq 4,5$ W, V_a = max. 450 V
En utilisation comme tube de sortie de déviation verticale avec $W_a \leq 4,5$ W, V_a = 450 V au max.
Beim Gebrauch als Endröhre für die vertikale Ablenkung mit $W_a \leq 4,5$ W, ist V_a = max. 450 V


7R04683
EL 82 7-6-'55
350
I
(mA)
300
250
200
150
100
50
0
V_a = 250V
V_{g2} = 250V
I_a
I_{g2}
−50
V_{g1}(V)
−40
−30
−20
−10
0

EL 82 PHILIPS

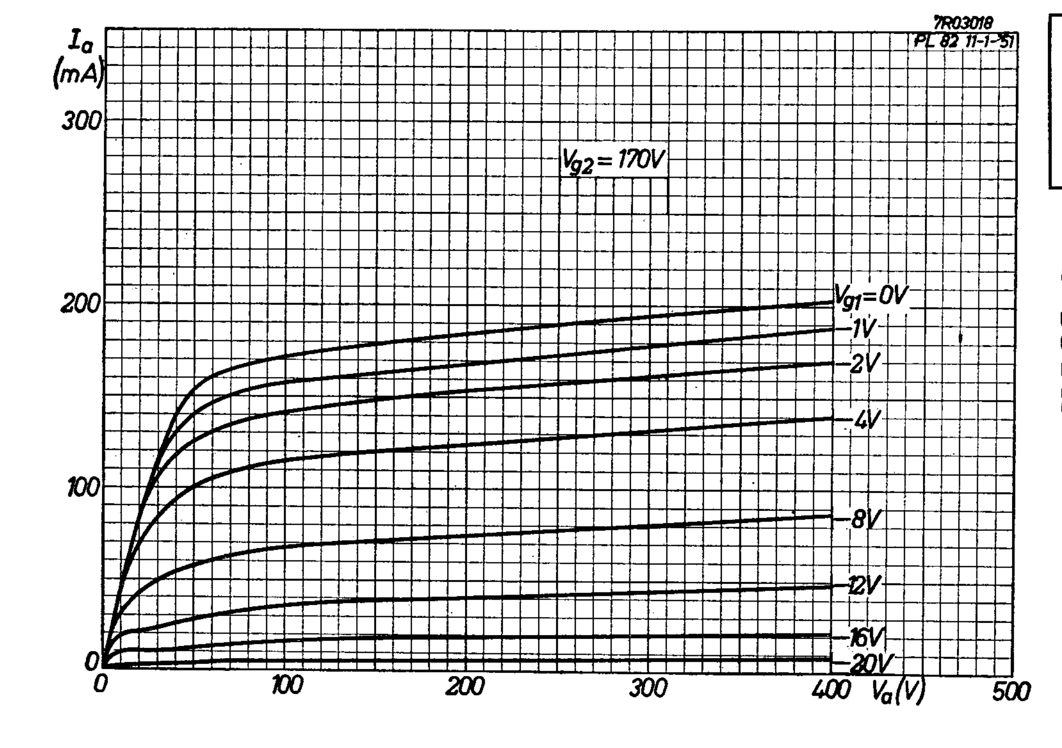


B

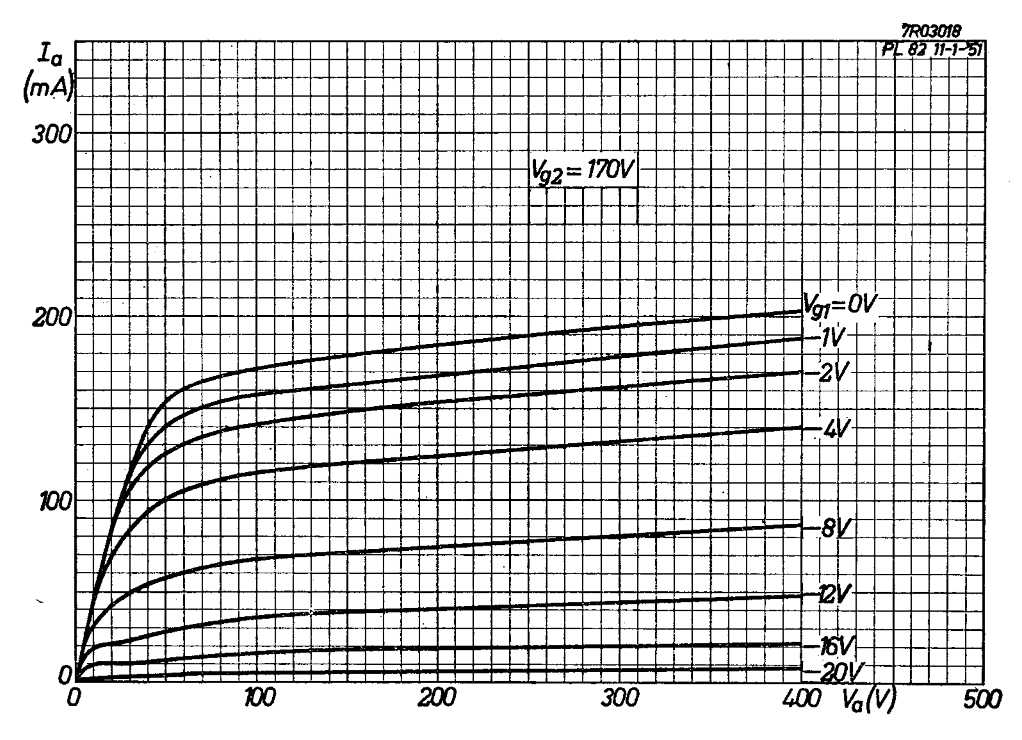

PHILIPS
EL 82
7R04684
EL 82 7-6-'55
V_{g1}=0V
V_{g2} = 250V
I_a (mA)
300
200
100
0
−2,5V
−5V
−7,5V
−10V
−12,5V
−15V
−17,5V
−20V
−22,5V
−25V
0
100
200
300
400
V_a (V)
500
10.10.1957
C

EL 82

PHILIPS

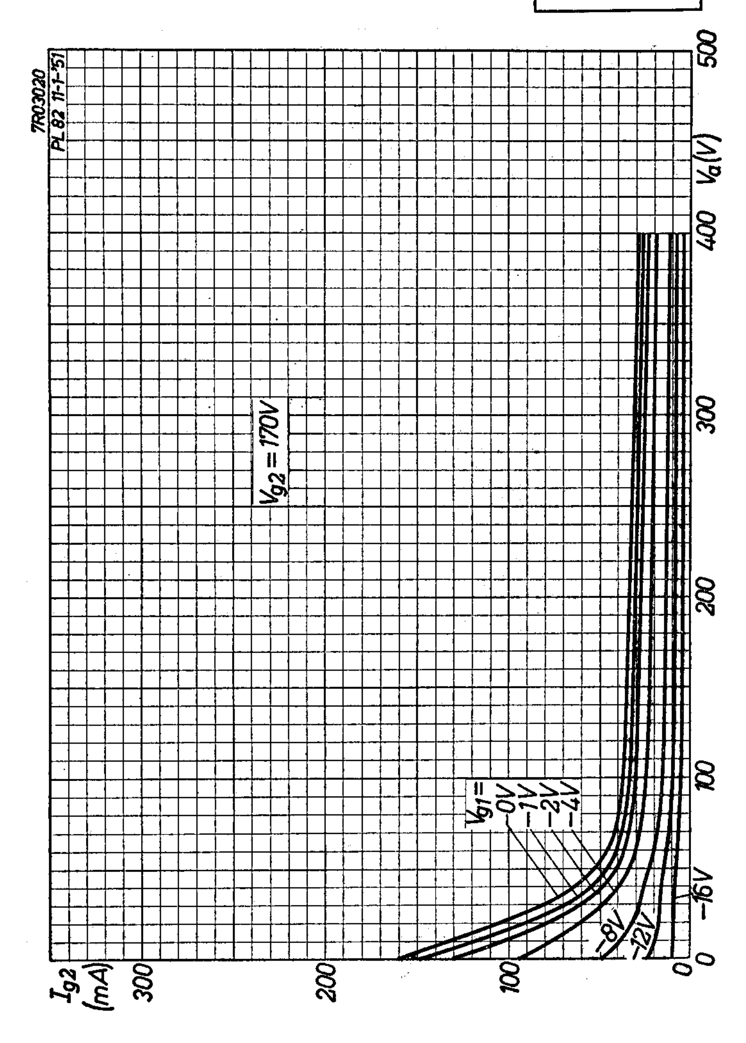


PHILIPS | **EL 82**

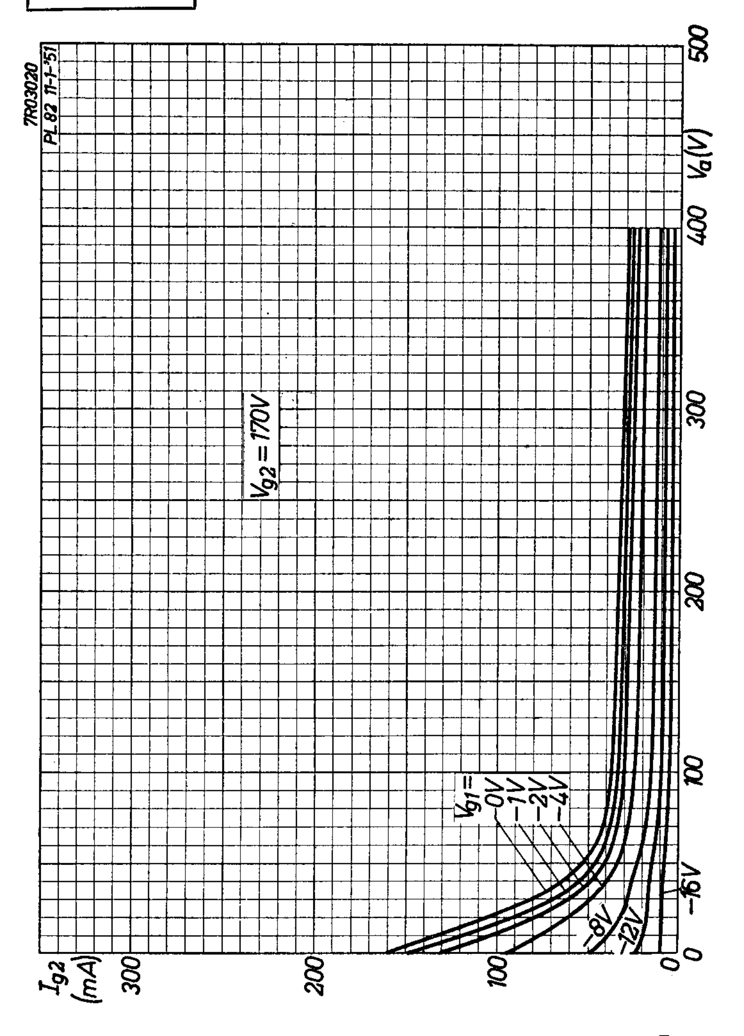


7.7.1955

E

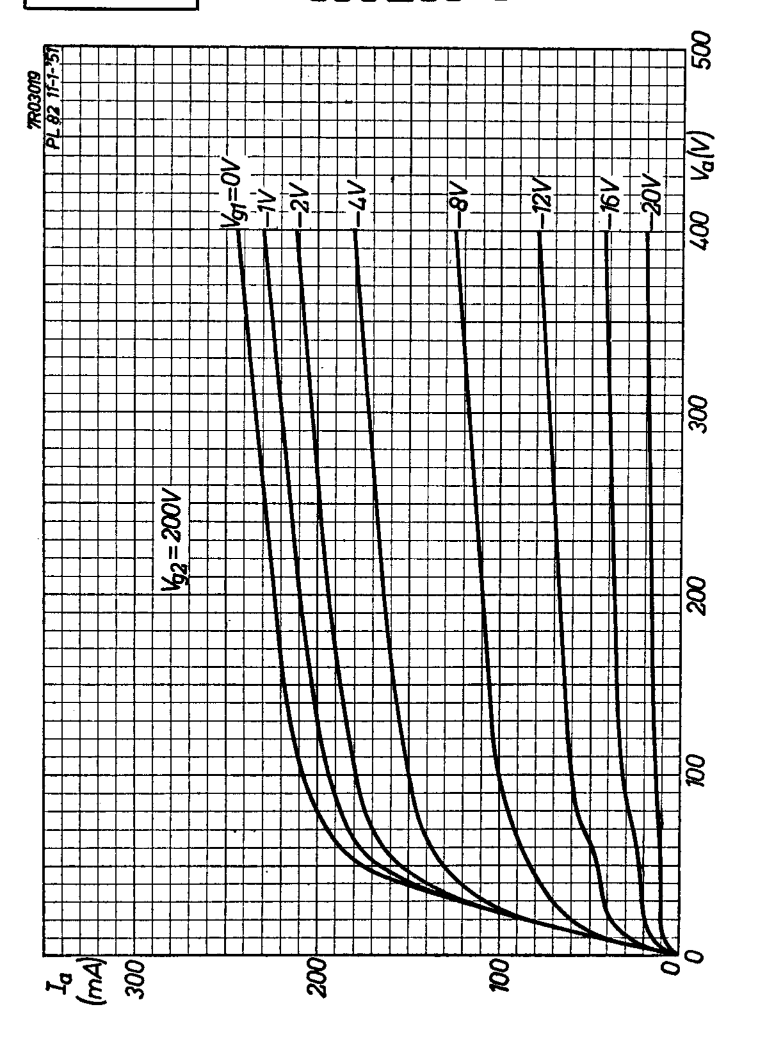

7R03020
PL 82 11-1-'51
V_a(V)
500
400
300
200
100
0
V_{g2} = 170V
V_{g1} =
-0V
-1V
-2V
-4V
-8V
-12V
-16V
I_{g2}
(mA)
300
200
100
0

EL 82 PHILIPS

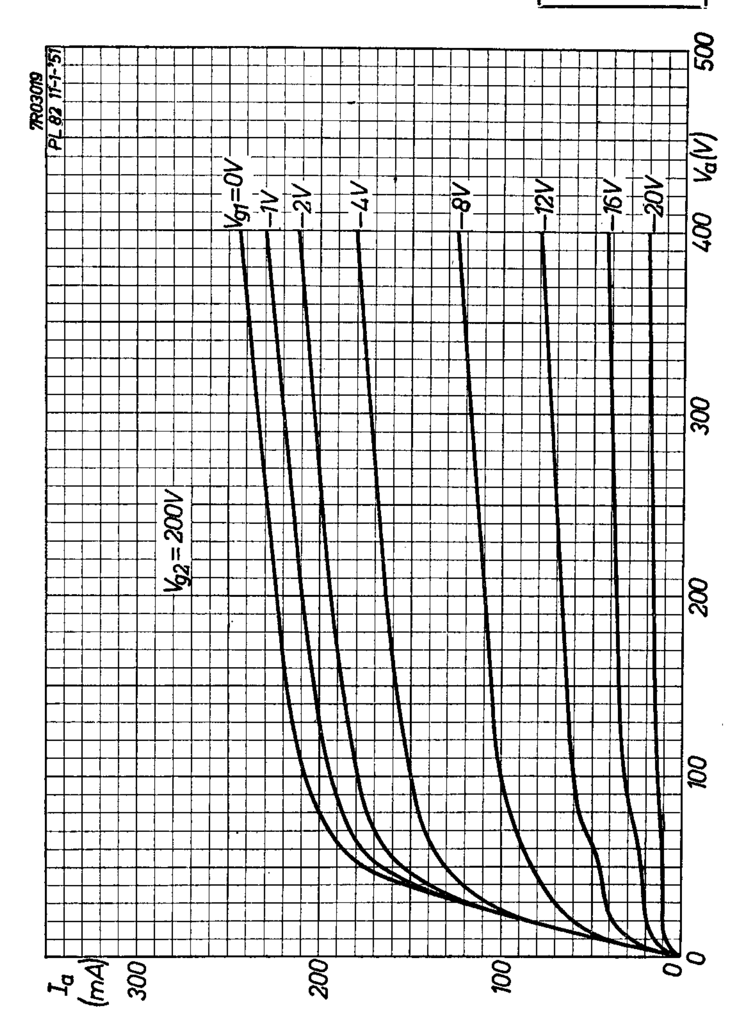


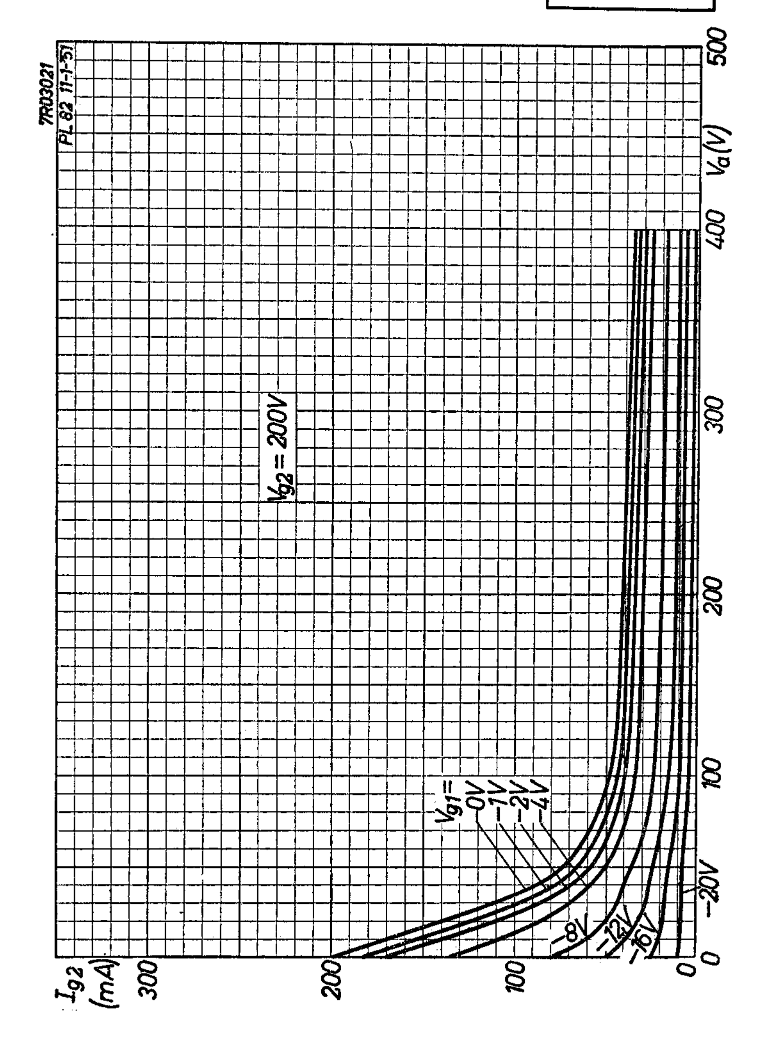
F

EL 82 PHILIPS

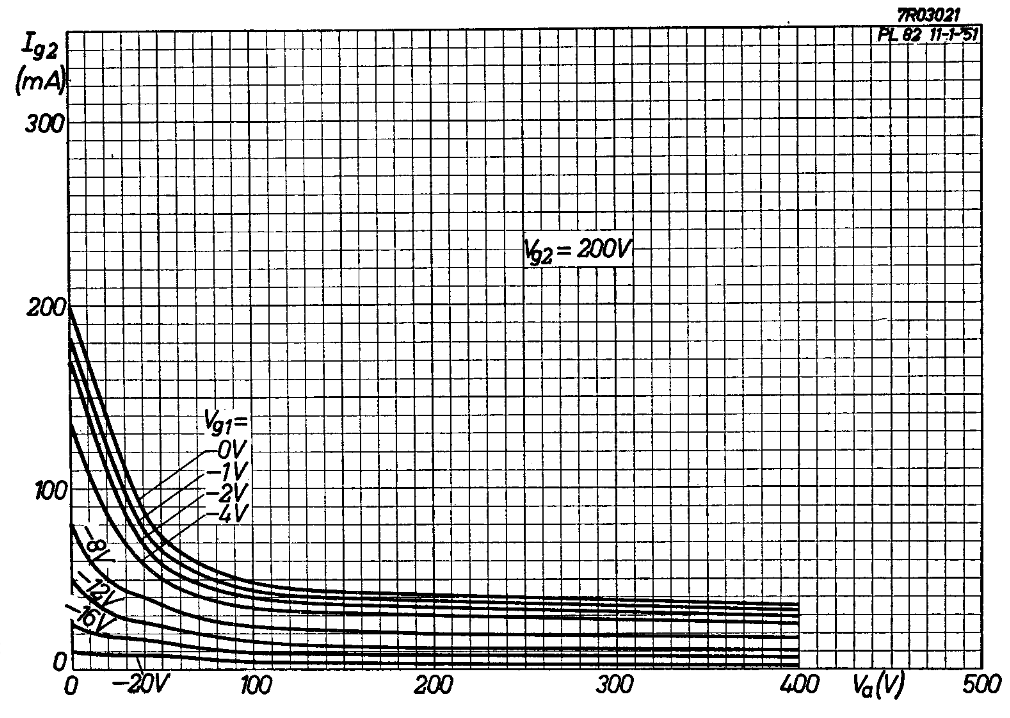


F


7R03019
PL 82 11-1-'51
V_{g1}=0V
-1V
-2V
-4V
-8V
-12V
-16V
-20V
V_{g2}=200V
V_a(V)
I_a (mA)
0
100
200
300
400
500


7R03021
PL 82 11-1-'51
V_{g2} = 200V
V_{g1}=
0V
-1V
-2V
-4V
-8V
-12V
-16V
-20V
I_{g2} (mA)
300
200
100
0
0
100
200
300
400
500
V_a(V)

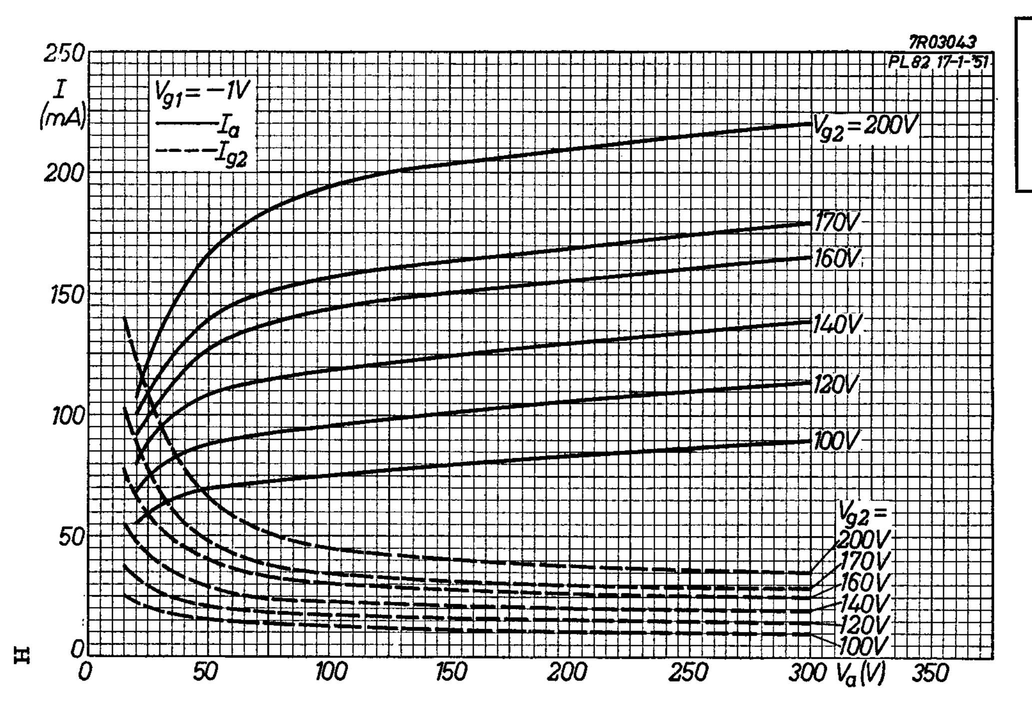
PHILIPS


7R03021
PL 82 11-1-'51
I_{g2} (mA)
300
200
100
0
V_{g2} = 200V
V_{g1} =
0V
−1V
−2V
−4V
−8V
−12V
−16V
−20V
0
100
200
300
400
V_a(V)
500

H

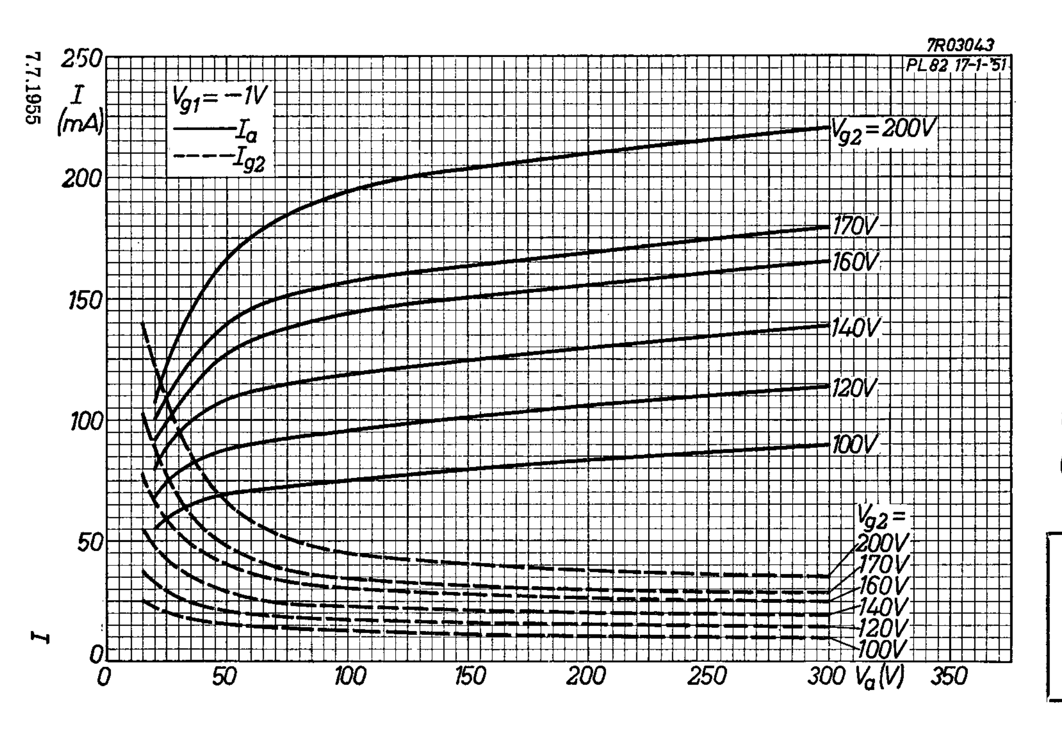
EL 82

PHILIPS



H

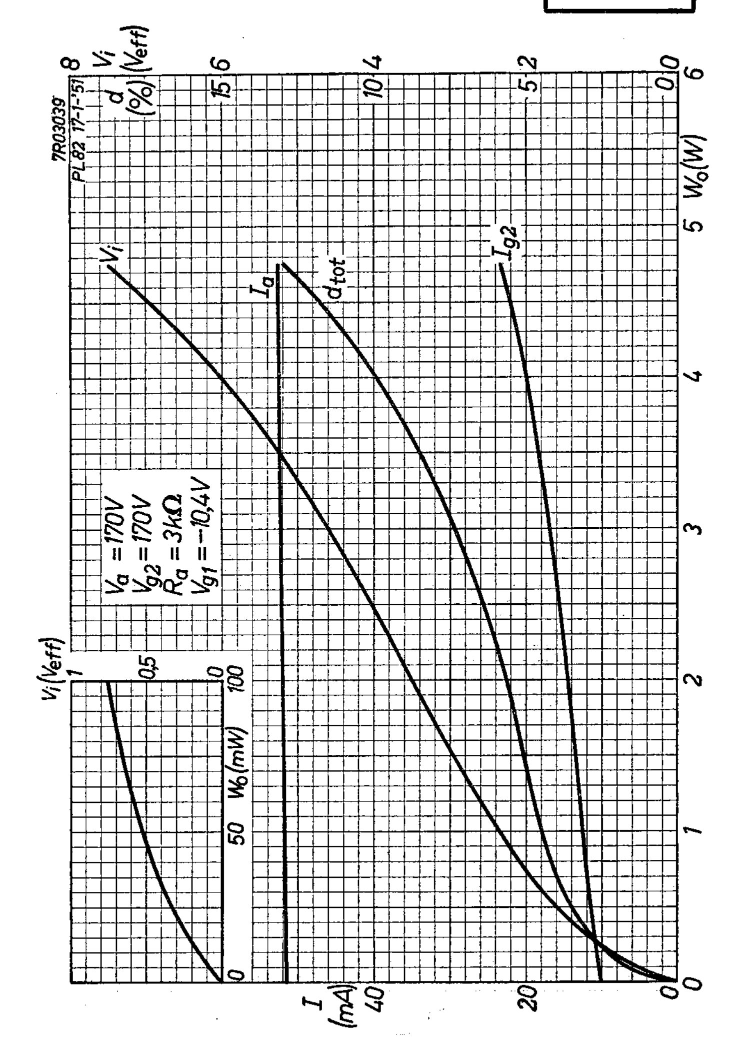
PHILIPS EL 82



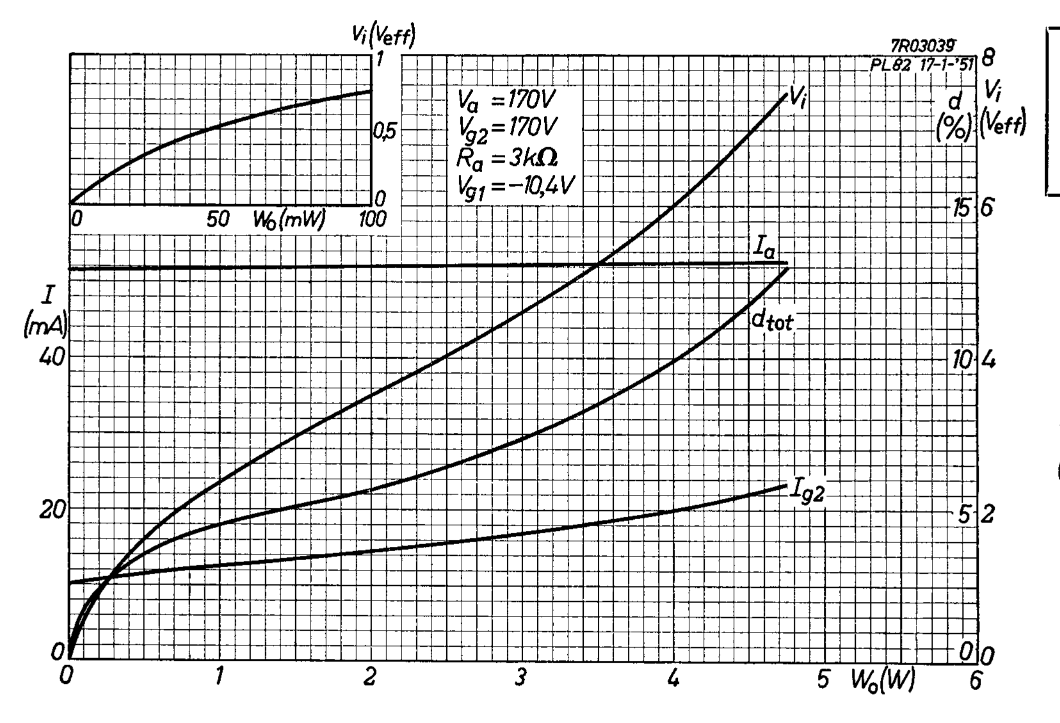
7.7.1955

I

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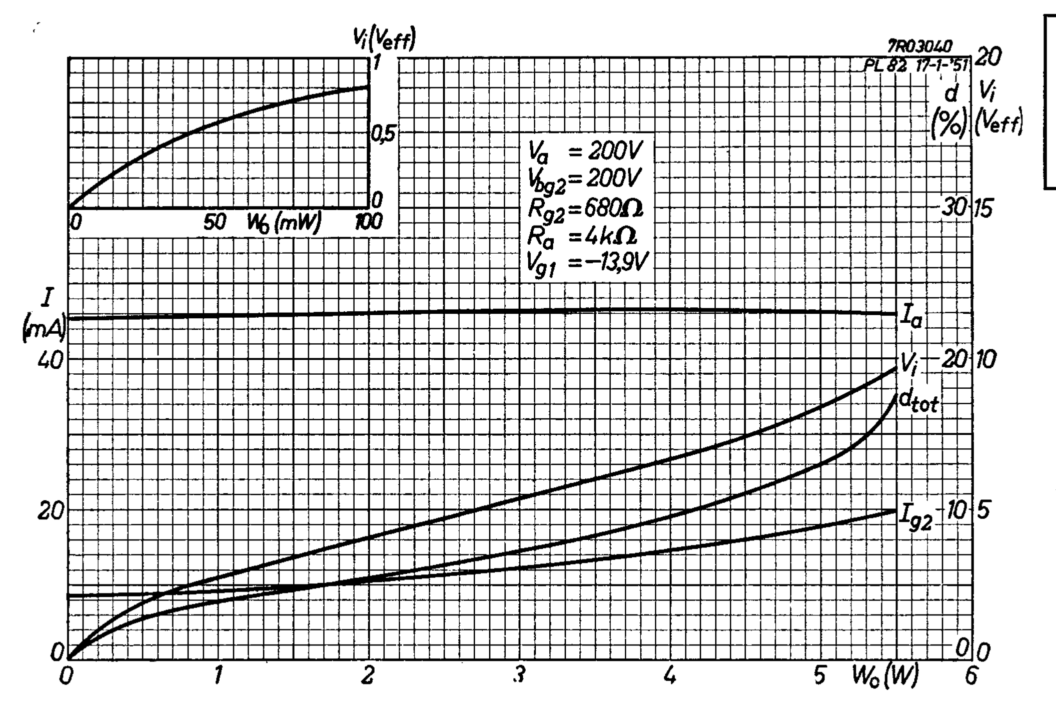


EL 82 **PHILIPS**



EL 82

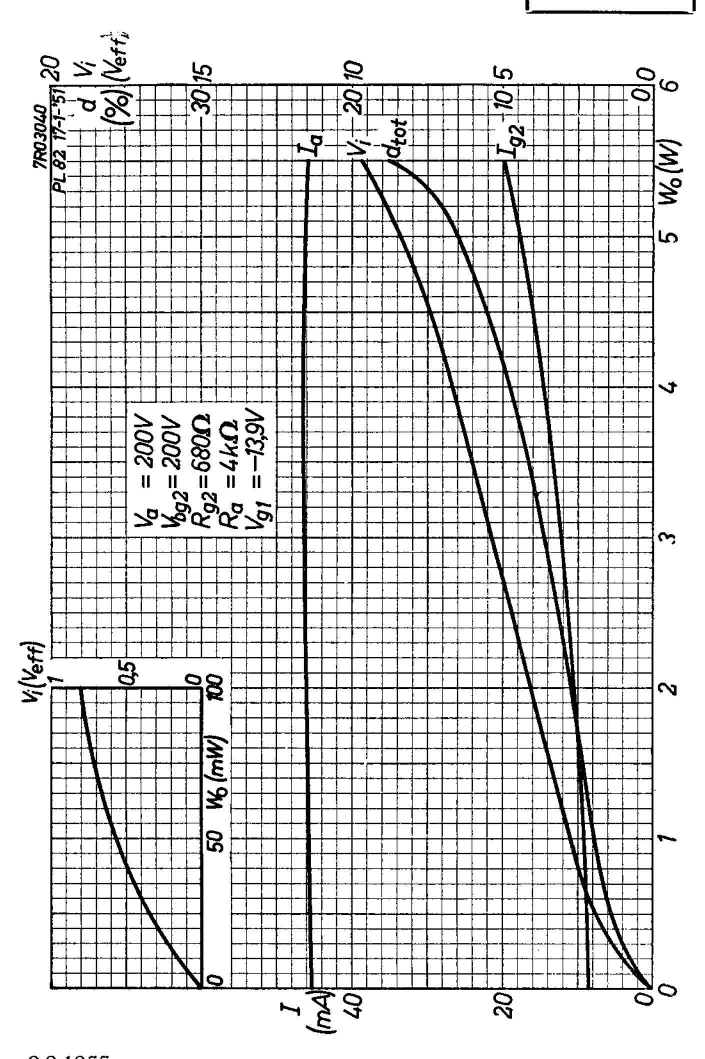
PHILIPS



J

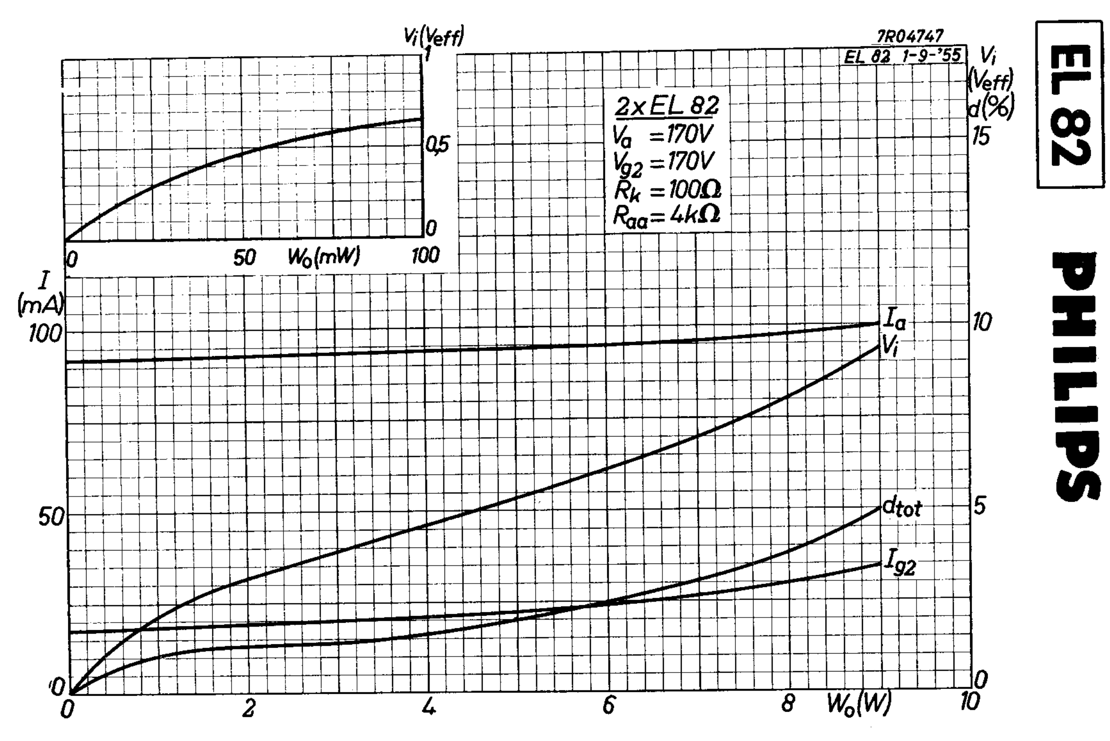
PHILIPS

EL 82



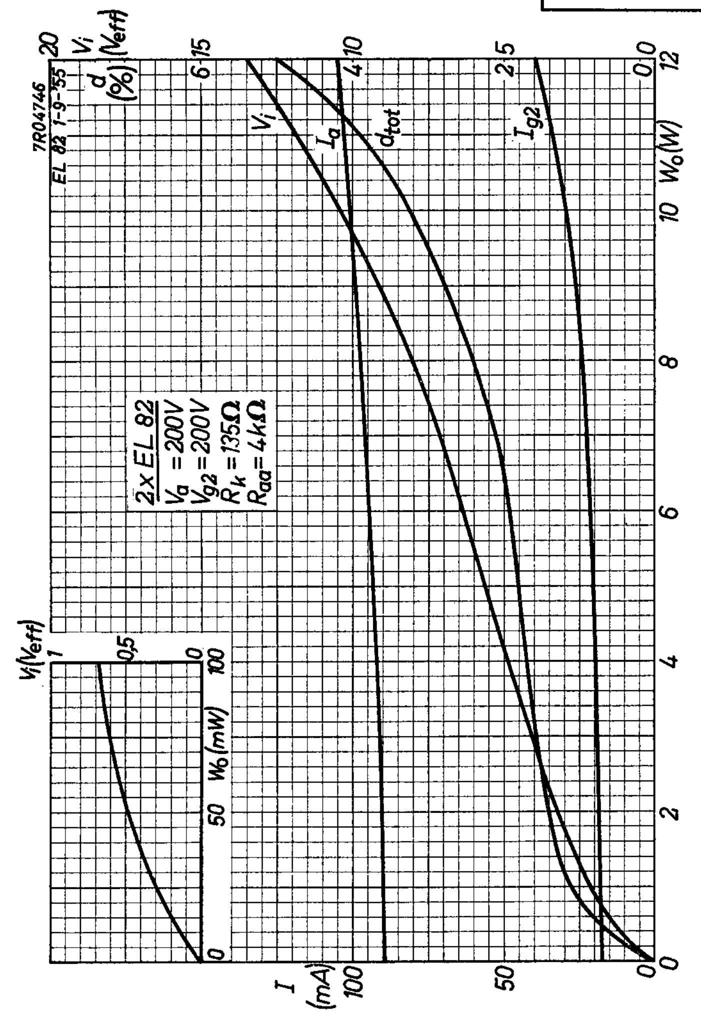
9.9.1955

K


7R04747
EL 82 1-9-'55
2x EL 82
Va = 170V
Vg2 = 170V
Rk = 100Ω
Raa = 4kΩ
Vi (Veff)
Wo(mW)
I (mA)
Vi (Veff) d(%)
Ia
Vi
dtot
Ig2
Wo(W)

PHILIPS

EL 82



9.9.1955

M



EL82

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7	D	1957.10.10
8	E	1955.07.07
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16	I	1955.07.07
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18	J	1955.07.07
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21	L	1955.09.09
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23, 24	FP	2000.01.06